

July 23, 1965

Dr. T.L.V. Ulbricht
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Dear Dr. Ulbricht:

Thank you for your letter of July 3 and for referring me to your very exciting treatment of "The Optical Asymmetry of Metabolites" in the Florkin and Mason compendium. I think you have dealt with the subject in a much more lucid manner than I was able to, and I will certainly endeavor to not overlook your review on any future occasion. Although my memory does not serve me well, I think it entirely likely that I have at least brushed up against your article before, but perhaps was not in a sufficiently receptive mood at the time. However, I should at least lay it on the table that the treatment of optical activity in "Signs of Life" was written several years ago, the entire paper having been in a draft version for quite a long time and having been used as a working paper at a number of meetings at which the strategies of exobiological exploration were discussed.

While I certainly agree that direct optical measurements can be greatly improved for the determination of optical activity, I still feel that approaches based on chemical resolution are immeasurably more sensitive. To some extent this has already been borne out in practice, as is hinted at in several places, including the enclosed reprint, and we have certainly far from reached the limit of detectivity in the way that the gas chromatographic system has been set up.

One of my most urgent concerns about the further development of space exploration programs is that they should provide the facilities whereby investigators like yourself will be able to participate, bringing in the full breadth of your own individual insight and power of experimental technique without imposing the present obligation of very heavy involvement in engineering questions. To do this premises some consensus as to what the most important issues really are, and I hope you will not lose any convenient opportunity to express yourself directly on the same matters.

ULBRICHT, T.L.V.

Dr. T.L.V. Ulbricht

July 23, 1965
Page 2

To return to optical activity, I have a very strong impression that Pasteur himself already understood the rational basis for the finding of optically active metabolites ubiquitously in living systems. He was certainly very much preoccupied with stereochemical specification, but I am not able to point to any specific quotation in his writings on just this point.

Cordially,

Joshua Lederberg
Professor of Genetics

Enclosure:

Halpern, B. and J.W. Westley, 1965. High sensitivity optical resolution of D,L amino acids by gas chromatography. Biochem. & Biophys. Res. Com. 19:361-363.